Blended Base for Population Estimates

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National Advisory Committee – 2022 Spring Virtual Meeting

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Overview

Presentation

- Population Estimates Program Background
- Vintage 2021 Estimates Base Considerations
- Blended Base Approach and Results
- Next Steps and Ongoing Research

Key Team Members

- Ben Bolender
- Luke Rogers
- Catherine Doren
- David Ihrke

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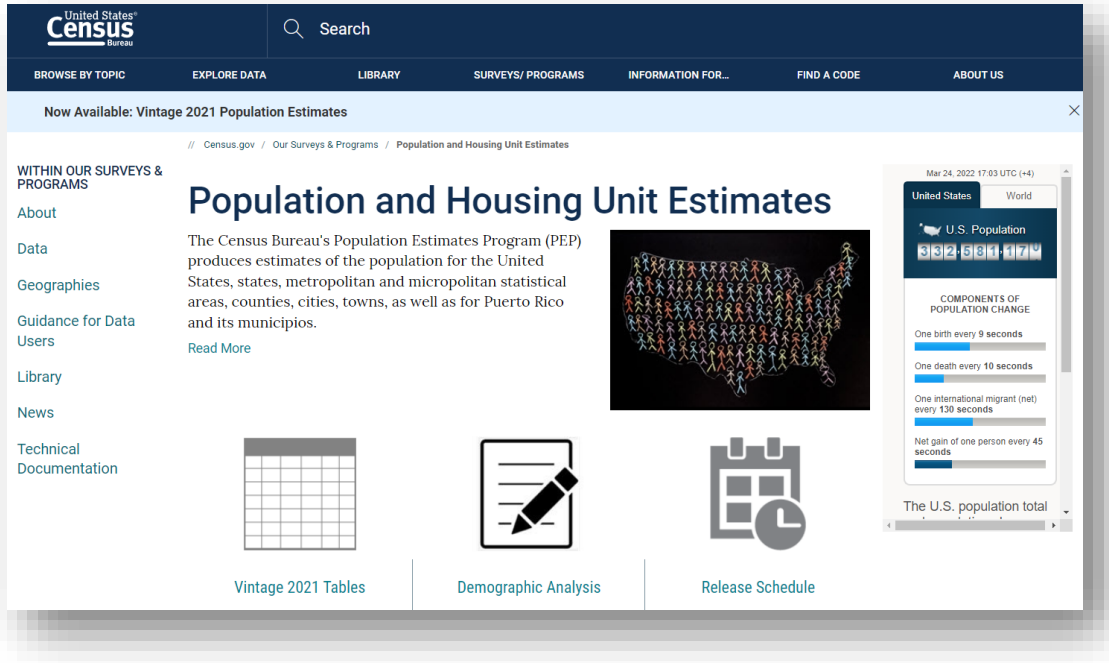
The Population Estimates Program

- The Population Estimates Program (PEP) disseminates official measures of population and housing units between decennial censuses
- Mandated by federal law
- Use cases include:
  - Population controls and denominators
  - Academic and business research
  - Program planning in the public and private sectors
- Time series are released annually featuring data for the date of the last census through the vintage year, which represents the latest year of estimates available
- Current estimates series is Vintage 2021 (April 1, 2020 to July 1, 2021)



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Considerations for 2021 Estimates Base

- The decennial census typically forms the base for the Census Bureau's postcensal population estimates
- Schedule constraints
  - Uncertain dates for receiving internal 2020 Census files
  - Research is needed to determine suitability of the 2020 Census data for use in the estimates base
  - Differential privacy requirements for Census still in development
- Final differentially private 2020 Census files will not include necessary variables for estimates production

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Blended Base Approach

- Nation, state, and county by full demographic characteristics
- Blended inputs
  - Vintage 2020 postcensal, full-detail county-level population estimates
  - 2020 Demographic Analysis (DA) national estimates by sex and age (0-84, 85+)
  - 2020 Decennial Census total population counts (PL 94-171)
- Benefits: Does not access unprotected 2020 data, mitigates some known Census coverage issues, and is consistent with decennial totals
- Limitations: Vintage 2020 inaccuracies may be carried into the Blended Base

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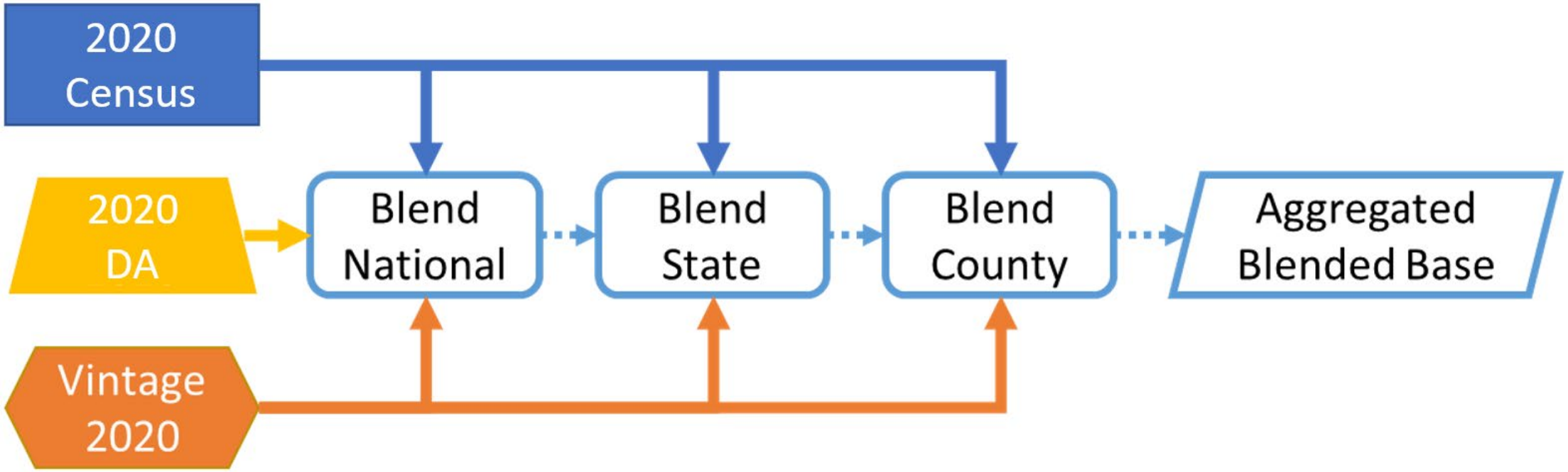
Blended Base Process for the Nation, States, and Counties



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Blended Base Results

- Resident population totals match 2020 Census redistricting data exactly for the nation, states, and counties
- National resident population by age (0-84, 85+) and sex distribution matches 2020 Demographic Analysis
- Race, Hispanic origin, and lower-level geographic distributions reflect the Vintage 2020 population estimates
- The undercount for young children in the 2010 Census (age 10 to 14 in 2020) and 2020 Census (age 0 to 4 in 2020) is mitigated in the Blended Base

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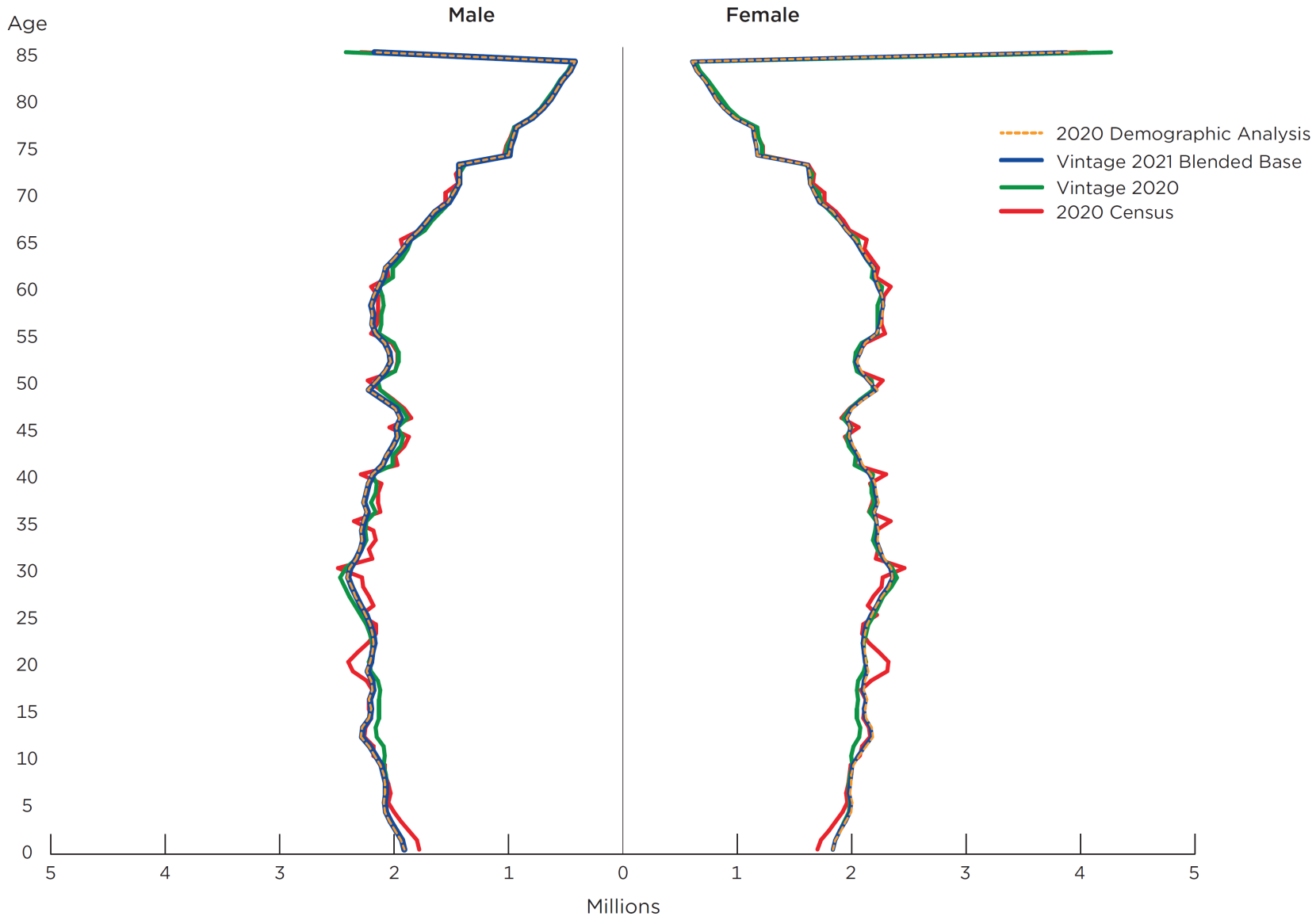
Vintage 2021 Blended Base, Base Inputs, and 2020 Census Data by Age and Sex: April 1, 2020



Note: These 2020 Census data by age and sex represent a special tabulation of the 2020 Census with confidentiality protections applied using the 2020 Census Disclosure Avoidance System. The U.S. Census Bureau reviewed this data product for unauthorized disclosure of confidential information and has approved the disclosure avoidance practices applied to this release. (DRB clearance number CB-FY22-DSEP-001.)
Source: U.S. Census Bureau, 2020 Decennial Census; 2020 Demographic Analysis; Vintage 2020 and 2021 Population Estimates.

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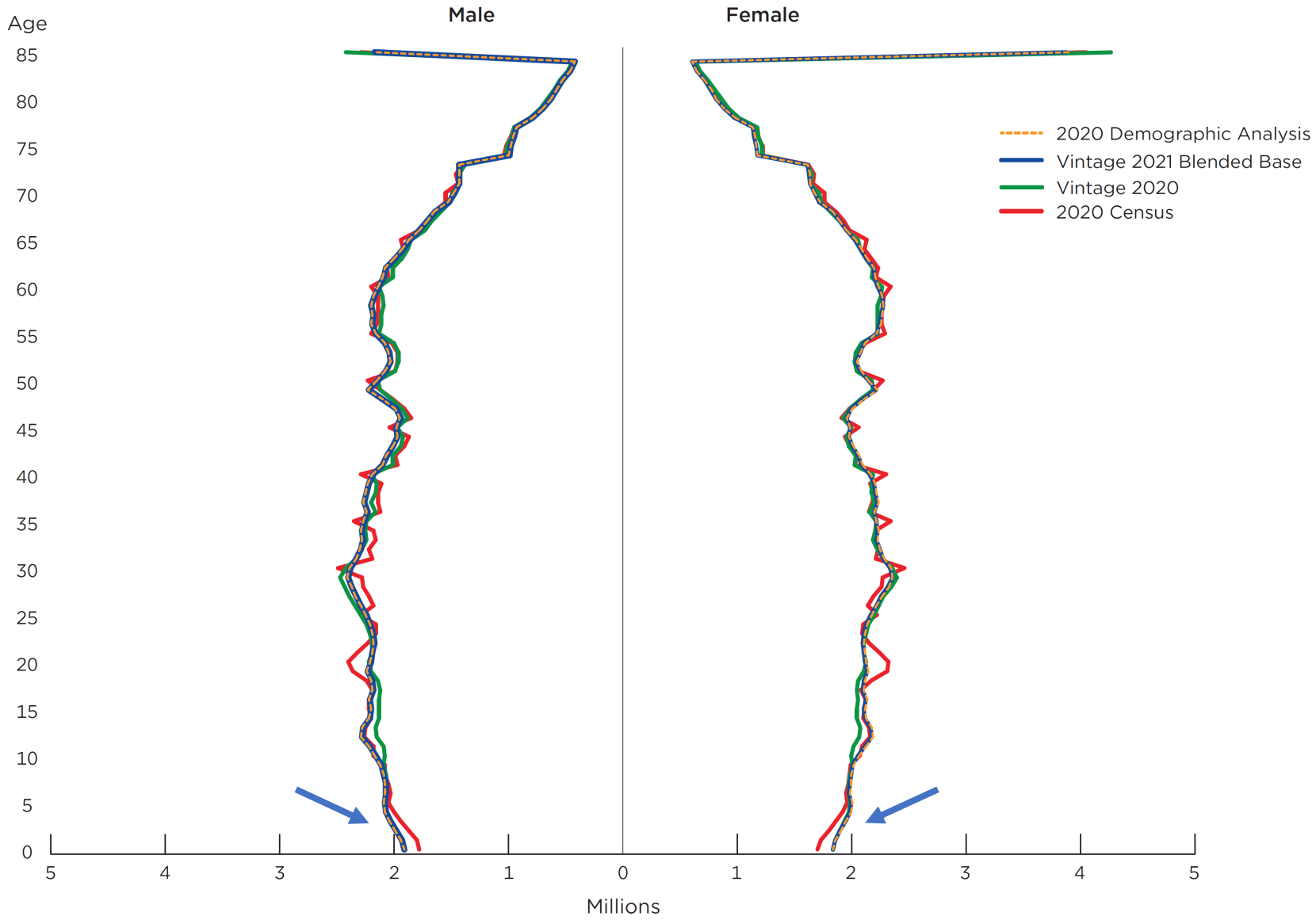

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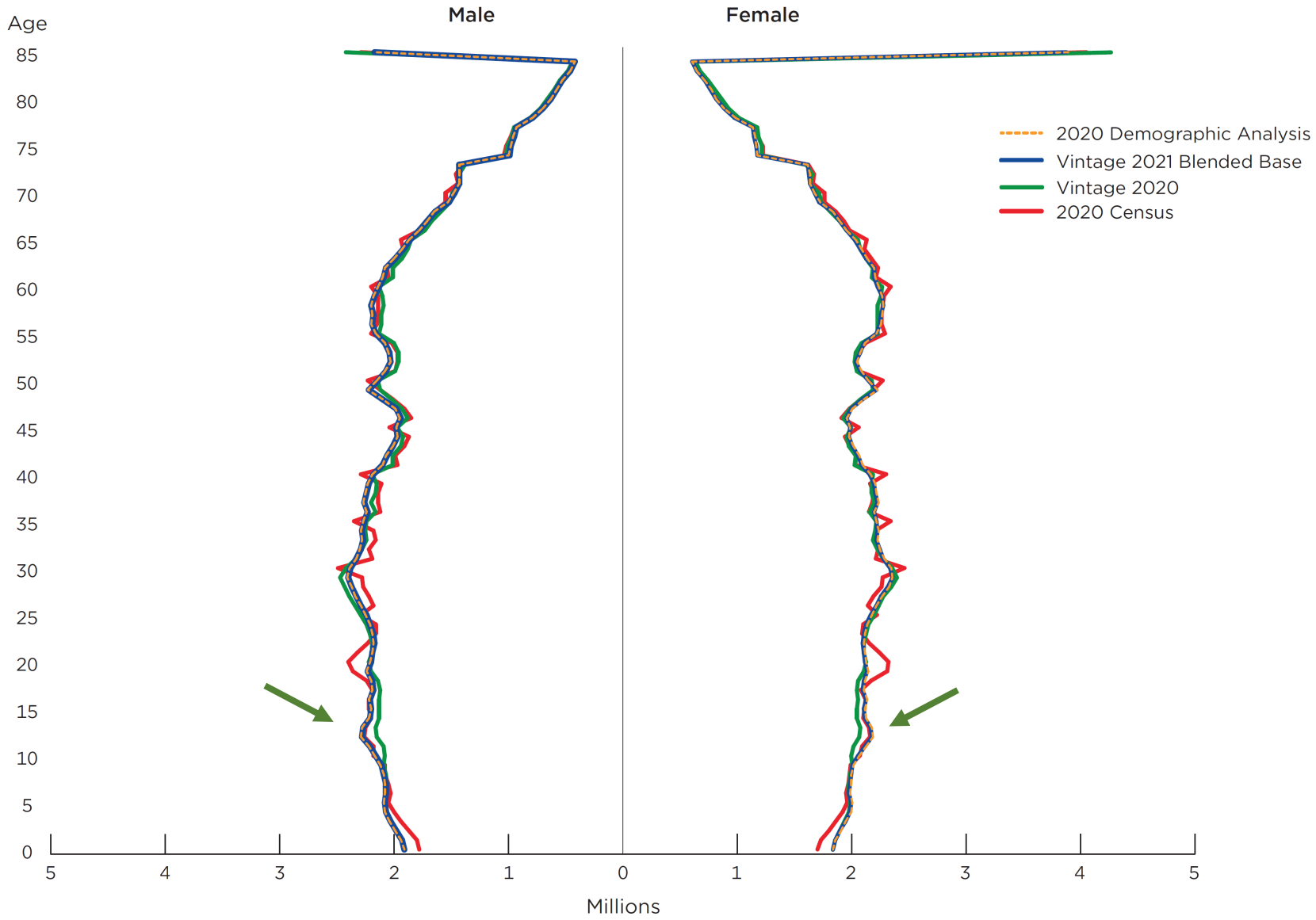

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Plans for Vintage 2022

- Methodology improvements
  - Use GQ and household population totals from the 2020 Census
  - Expand use of DA age detail to 100+ to maximize its utility
- Training new team members
  - We have expanded our team and are training developers and reviewers on the methods from V2021
- Review process enhancement
  - Last vintage's review process was very successful
  - We are continuing to improve upon and streamline our process

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Ongoing Work: Estimates Evaluation

- Each decade we evaluate the population estimates using the results of the new census. We call this the Estimates Evaluation (E2)
- The primary purpose of E2 is to highlight areas where we can improve the current decade's postcensal estimates process
- In addition, exploring the relationship between the Vintage 2020 estimates and the 2020 Census may also inform enhancements we could make to the Vintage 2020 time series, and thereby make the Blended Base better

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Ongoing Work: Addressing Coverage Results

- The Blended Base partially mitigates coverage concerns by age and sex at the national level
- We are researching the feasibility of taking coverage measures into account in the development of the population estimates
- A technical research team has been established within the Population Division
- We will keep stakeholders updated regarding research progress and timing

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Questions for NAC Discussion

1. Do you have any questions about why we needed a new approach for producing the Vintage 2021 population estimates or how we implemented the Blended Base?
2. Do you have recommendations for our ongoing research on the Blended Base?
3. What additional information would be helpful for the NAC members to make recommendations about this topic?
4. Are there suggestions from NAC members on how we can more effectively communicate information about the Blended Base?

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